

CLAIMS

What is claimed is:

1. An efficient method of monitoring neighboring cells in a communication system, comprising the steps of:

monitoring at least one neighboring cell among a plurality of cells for a load condition on the at least one neighboring cell;

monitoring the at least one neighboring cell for a service capability; and

discontinuing the monitoring of the at least one neighboring cell if a desired service capability fails to match the service capability of the at least one neighboring cell or if the load condition fails to meet a predetermined load condition.

2. The method of claim 1, wherein the method further comprises the step of monitoring the at least one neighboring cell for a signal quality indication.

3. The method of claim 2, wherein the method further comprises the step of discontinuing the monitoring of the at least one neighboring cell if the signal quality indication falls below a predetermined threshold.

4. The method of claim 2, wherein the step of monitoring for the signal quality indication comprises the step of monitoring for a signal quality estimate.

5. The method of claim 1, wherein the step of discontinuing the monitoring comprises the step of abstaining from monitoring the at least one neighboring cell for a period of time.

6. The method of claim 1, wherein the step of monitoring for the service capability comprises the step of monitoring for the capabilities selected among the group comprising private call, dispatch, and short messaging service.

7. The method of claim 1, wherein the step of monitoring the load condition comprises the step of monitoring a load condition for each of the service capabilities supported on the at least one neighboring cell.

8. The method of claim 7, wherein the steps of monitoring the load condition and the service capability further comprises the step of deciphering by a portable communication unit a codeword transmitted by the at least one neighboring cell.

9. The method of claim 8, wherein the method further comprises the step of transmitting the codeword periodically in a known slot number to avoid stealing bits from every transmit slot.

10. The method of claim 8, wherein the codeword is deciphered only if a synchronization pattern fails to provide the mobile station with enough information to make a decision.

11. The method of claim 8, wherein the codeword forecasts not only its current channel loading but also its projected service loading for subsequent timeslots.

12. The method of claim 2, wherein the method further comprises the step of camping on the at least one neighboring cell if the desired service capability matches the service capability of the at least one neighboring cell, the load condition falls within the predetermined load condition, and the signal quality indication meets or exceeds a predetermined threshold.

13. The method of claim 1, wherein the step of monitoring the load condition comprises the step of decoding and matching a predetermined synchronization code indicative of the load condition.

14. A portable communication device, comprising:
- a transceiver; and
 - a processor coupled to the transceiver, wherein the processor is programmed to:
 - monitor at least one neighboring cell among a plurality of cells for a load condition on the at least one neighboring cell;
 - monitor the at least one neighboring cell for a service capability; and
 - discontinue the monitoring of the at least one neighboring cell if a desired service capability does not match the service capability of the at least one neighboring cell or if the load condition fails to meet a predetermined load condition.
15. The portable communication device of claim 14, wherein the portable communication device is a cellular phone that operates on at least one communication protocol selected among GSM, iDEN, UMTS, TDMA, GPRS/EDGE, CDMA, and WCDMA.
16. The device of claim 14, wherein the processor is further programmed to monitor the at least one neighboring cell for a signal quality indication.
17. The device of claim 16, wherein the processor is further programmed to discontinue the monitoring of the at least one neighboring cell if the signal quality indication falls below a predetermined threshold.
18. The device of claim 16, wherein the signal quality indication comprises a signal quality estimate.
19. The device of claim 14, wherein the processor is programmed to monitor a load condition for each of the service capabilities supported on the at least one neighboring cell.

20. The device of claim 14, wherein the processor monitors the service capability by deciphering a codeword transmitted by the at least one neighboring cell.

21. The device of claim 16, wherein the processor is further programmed to cause the device to camp on the at least one neighboring cell if the desired service capability matches the service capability of the at least one neighboring cell, the load condition falls within the predetermined load condition, and the signal quality indication meets or exceeds a predetermined threshold.

22. The portable communication device of claim 14, wherein the portable communication device further comprises a synchronization detector for detecting at least one among a plurality of synchronization codes representative of the load condition.

23. The portable communication device of claim 22, wherein the portable communication device further comprises a channel decoder and a symbol mapper for decoding and mapping of at least one codeword indicative of at least one among the load condition and the service capability of the at least one neighboring cell.

24. A cellular communication system, comprising:
a portable communication unit having a transceiver and a processor coupled to the transceiver;

a plurality of cells, at least one cell among the plurality of cells including a transmitter that transmits an indication of a load measurement and a service capability for the at least one cell, wherein the processor in the communication unit is programmed to:

monitor the at least one cell among a plurality of cells for the load measurement and the service capability on the at least one cell; and

discontinue the monitoring of the at least one cell if a desired service capability does not match the service capability of the at least one neighboring cell or if the load measurement meets or exceeds a predetermined threshold.

25. The cellular communication system of claim 24, wherein the processor is further programmed to monitor the at least one cell for a signal quality indication.

26. The cellular communication system of claim 25, wherein the processor is further programmed to discontinue the monitoring of the at least one cell if the signal quality indication falls below a predetermined threshold.